

A P P L I C A T I O N *of*

CELOTEX
INSULATING LUMBER

STANDARD BUILDING BOARD

For Sheathing; Under Plaster;
Insulating Roofs and Attics;
As Interior and Exterior Finish

SPECIFICATIONS NO. 21

*Issued November 1, 1926.
Supersedes all previous
specifications governing
the application of Celotex
Standard Building Board*

THE CELOTEX COMPANY
645 NORTH MICHIGAN AVENUE, CHICAGO, ILLINOIS
Mills: NEW ORLEANS

IN CANADA
ALEXANDER MURRAY & COMPANY
LIMITED
MONTREAL - TORONTO - HALIFAX - ST. JOHN - WINNIPEG - VANCOUVER

THE CELOTEX COMPANY

CHICAGO, ILLINOIS; MILLS: NEW ORLEANS, LA.

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Canadian Representatives

ALEXANDER MURRAY & COMPANY, LIMITED
MONTREAL TORONTO HALIFAX WINNIPEG
VANCOUVER

1926

SPECIFICATIONS NO. 21

*Application of***CELOTEX STANDARD BUILDING BOARD**

* [*DESCRIPTION: Thickness $\frac{7}{16}$ ", average weight 60 pounds per 100 square feet, width 4 feet, lengths 8, 8½, 9, 9½, 10 and 12 feet.*] *

Section 1

STANDARD APPLICATION

Framing

Sills, studs, plates, joists and rafters shall be framed as in ordinary frame construction, spacing the studs, joists and rafters accurately on 16-inch centers. Wherever it is necessary to have a horizontal joint in the CELOTEX, a 2"x4" header shall be cut in between the framing. No bracing is necessary other than that commonly used or required in frame construction. Where CELOTEX is used under plaster on ceilings a 2"x4" header shall be cut in every 4 feet for nailing.

Moistening Celotex before Applying

Moisten lightly and pile CELOTEX boards not less than one day before nailing. This should be done by sprinkling lightly with a hose, sprinkling can, or broom dipped into a pail of water while the boards are being unloaded and piled. To prevent freezing sprinkle indoors in cold weather. Nail to framing within two hours after removing from pile.

Application of Celotex

The CELOTEX boards shall be applied lengthwise and directly to studs, joists, furring and rafters with ample bearing for nailing along all edges.

Leave $\frac{3}{16}$ " space between adjoining boards,

also at top and bottom of boards. The board is cut scant in width and length to allow for this space.

Around window and door frames or where a snug joint is desired, the CELOTEX shall be brought to close contact with the frames. Do not force into place. Note the extra strip of CELOTEX nailed to the back of frames, as shown on wall section details, to prevent leakage of hot or cold air.

Where rafters project beyond face of studing, CELOTEX shall be cut to fit snugly between rafters and to form a close joint between wall and roof insulation.

Nailing of Celotex

Beginning at the top, nail the CELOTEX first to intermediate studs. Then nail entirely around all edges of each board, placing the nails $\frac{3}{8}$ " away from the edge. Nail in similar manner to joists, furring, rafters, sills, plates and headers. Use standard 1½" galvanized roofing nails with $\frac{3}{8}$ " heads. Space nails 3" apart along edges and 6" apart along intermediate frame members, driving nails until the heads are slightly below the surface of the CELOTEX.

Where CELOTEX is applied to 1" wood strips on masonry walls, use 1¼" galvanized roofing nails with $\frac{3}{8}$ " heads.

Section 2

CELOTEX AS SHEATHING UNDER WOOD SIDING, SHINGLES, STUCCO, BRICK OR STONE VENEER

Material

Sheathing for all exterior walls shall be CELOTEX Standard Building Board.

Applying Celotex

The CELOTEX shall be moistened and applied to framing in accordance with Section 1, Standard Application.

Applying Wood Siding

Apply wood siding directly over CELOTEX, nailing through to the studs. Siding boards shall butt over studs.

Applying Shingles

Nail 1" x 2" furring strips horizontally over CELOTEX to studs, spacing to fit the shingles. Nail shingles to furring strips.

Applying Stucco

Stucco shall be applied in accordance with the Manufacturer's Specifications, to any of the following stucco bases:

1—Self-furring Stucco Bases

Beveled wood lath, self-furring wire lath, expanded metal lath or other self-furring

stucco bases shall be applied directly over CELOTEX, nailing or stapling through the CELOTEX into the studs.

2—Non-furring Stucco Bases

(a) Wood furring strips shall be nailed vertically over each stud through the CELOTEX to the stud. Staple, or nail wood, wire or metal lath, to furring.

(b) Metal furring, round iron rods, or crimped band iron shall be stapled through the CELOTEX into the studs. Wire metal lath to furring.

(c) When using self-furring nails or staples, these shall be driven through the CELOTEX into the studs in applying the lath.

Applying Brick or Stone Veneer

Anchors for brick or stone work shall be nailed through CELOTEX into the studs. The brick or stone shall be laid in the usual manner. Allow not less than $\frac{1}{2}$ " space between the CELOTEX and the brick or stone.

General Note

In all cases, nails or staples of sufficient length to enter the wood backing at least 1" must be used.

Section 3

INSULATING ROOFS AND ATTICS WITH CELOTEX

Material

Roof and attic insulation shall be CELOTEX Standard Building Board.

Applying Celotex

The CELOTEX shall be moistened and applied to framing in accordance with Section 1,

Section 3—Continued

INSULATING ROOFS AND ATTICS WITH CELOTEX

Standard Application. Apply CELOTEX to continuous wood surfaces such as flooring or roof sheathing by laying the edges in moderate contact and nailing with large-headed $1\frac{1}{4}$ " galvanized roofing nails. The place of application and the number of thicknesses shall be as directed by the architect or owner. Where more than one layer of CELOTEX is used, each layer shall break joints with the preceding one and the nails used shall be long enough to secure the CELOTEX firmly to the underlying wood.

(a) Over Roof Rafters

When the CELOTEX is to be covered with rigid roofing, such as wood shingles, slate or tile, it shall be nailed directly to the rafters and $1" \times 2"$ furring strips shall be nailed horizontally over it, driving the nails into the rafters. Furring strips shall be spaced to fit the particular roofing specified.

When the roof is to be covered with roll or sheet roofing or flexible shingles, apply wood sheathing either over or under the CELOTEX. In all cases the roofing nails must be long enough to penetrate the wood sheathing.

In roofs of summer cottages where CELOTEX is used as interior finish in connection with open rafters, the CELOTEX shall be applied directly over the top of the rafters.

(b) Under Roof Rafters

When nailing CELOTEX to the under side of roof rafters, extend it to a tight joint with the wall insulation on all sides. In houses already built, where there is no side wall insulation, bring the CELOTEX to close contact with the side wall sheathing or plate, and carefully close all spaces along the eaves where hot or cold air leakage may occur. If framing is not spaced properly, it shall be furred with $1" \times 2"$ furring strips spaced 16" on centers.

If attic is to be used as a bedroom or other living room and it is to be plastered, follow specifications in Section 4, "Plastering on CELOTEX." If the CELOTEX is to be used for interior finish and decorated, follow specifications in Sections 5 and 8.

(c) Over Attic Joists

Apply CELOTEX directly to attic floor joists, extending to a tight joint with side wall insulation. In old houses where there is no side wall insulation, the CELOTEX shall be carefully fitted to the side wall sheathing or plate to prevent leakage of cold or hot air. If eaves are not tight the joist space between the CELOTEX and the ceiling below shall be blocked off at the ends to prevent air leakage into this space. Lay wood floor over the CELOTEX in portions of the attic to be used for storage or living room purposes, nailing through to joists.

(d) Over Attic Floors

If attic is already covered with flooring, apply CELOTEX to the floor as specified at the head of this section. Wood flooring, linoleum, carpet, or canvas may be placed over the CELOTEX, if desired.

(e) Over Flat Wood Decks

The roof decks shall be constructed in the usual manner to the required slopes and swept clean before laying CELOTEX insulation. The cant strips, if required, shall be installed after the CELOTEX is in place.

Apply the CELOTEX over this deck and nail as specified at the head of this section.

At all parapet walls and other roof projections, the CELOTEX shall be cut and properly fitted and **shall not be forced** into place at any point.

Tin and other forms of roofing shall be applied in accordance with the Manufacturer's Specifications.

NOTE: Over wood, metal, or concrete decks, for commercial or industrial buildings or for roofs of large area, and for situations where a problem of condensation is to be contended with, see specifications covering CELOTEX Industrial Board. CELOTEX Industrial Board may be used on any flat decks specified herein, in place of CELOTEX Standard Building Board.

Section 4

PLASTERING ON CELOTEX

Material

All surfaces to be plastered shall be covered with CELOTEX Standard Building Board.

Applying Celotex

The CELOTEX shall be moistened and applied to framing in accordance with Section 1, Standard Application, special attention being given to moistening and nailing.

Reinforcing Corners and Joints

All exposed corners shall be reinforced with galvanized metal corner beads from floor to ceiling. All interior corners, both walls and ceilings, shall be reinforced with wire lath or expanded metal lath 6" wide bent at right angles and stapled over the CELOTEX to the wood frame at intervals of about one foot, so as to reinforce the plaster. Joints between frame and masonry walls shall be reinforced in the same manner.

Strips of expanded metal lath or galvanized wire mesh 4" wide, shall be applied over all joints between CELOTEX boards, to reinforce the plaster.

Before covering joints with metal lath or beginning to plaster, inspect joints to see that they are $\frac{3}{16}$ " wide; if not cut open with a coarsely set saw, chisel or knife.

Plastering on Celotex

Do not moisten CELOTEX after nailing.

Gypsum plasters containing not more than 10 per cent of lime shall be used. If neat gypsum plaster is used, mix one part with not more than two parts of clean, coarse, sharp sand, free from loam or other foreign

matter. Sand recommended by the American Society for Testing Materials is described as follows: "When dry, not more than 6 per cent by weight shall be retained on a No. 8 sieve (8-mesh); not less than 80 per cent by weight shall be retained on a No. 50 sieve; and not more than 6 per cent by weight shall pass a No. 100 sieve."

If a suitable sand is not available, use prepared sanded gypsum plaster or gypsum wood fiber plaster, mixing according to manufacturer's directions.

Only quick setting gypsum plasters shall be used, preferably those setting in about 1½ hours. The time of "set" shall not exceed two hours.

The plasterer should make a preliminary test to determine the time of set.

Lime plaster or lime mixed with gypsum plaster shall not be used for the scratch or brown coat.

Any type of finish coat may be used, provided its thickness is not more than $\frac{1}{8}$ ".

Apply the plaster directly to the CELOTEX, always pressing it well into the joints. The first coat or scratch and brown coat together must have a thickness of not less than $\frac{3}{8}$ " and must be thoroughly dry before applying finish coat. The total plaster thickness shall be not less than $\frac{1}{2}$ " thick.

Darby strokes must be in the direction of joists and studs and the darby or rod must always span two joists or studs.

Freshly plastered rooms must be thoroughly ventilated in both winter and summer. This is very important and failure to do so will make it impossible for the plaster to dry out and will cause trouble.

See next page for "Important Rules for Plastering on Celotex"

IMPORTANT RULES FOR PLASTERING ON CELOTEX

- 1—Moisten and pile **CELOTEX** boards the day before nailing. Avoid freezing. Do not moisten after nailing.
- 2—Reinforce plaster at all interior corners and where frame and masonry construction meet, and at all joints between **CELOTEX** boards with strips of expanded metal or wire lath, and reinforce exterior corners with corner beads.
- 3—See that all **CELOTEX** boards are firmly nailed, in accordance with specification, leaving a $\frac{3}{16}$ " space around all boards.
- 4—Use a quick setting gypsum plaster, and if the plaster to be used fails to set within two hours, add an accelerator.
- Do not use lime plaster or mix lime with gypsum plaster in scratch or brown coat.
- 5—The first coat of plaster in two-coat work, or the scratch and brown coats in three-coat work, must never be less than $\frac{3}{8}$ " thick and must be thoroughly dry before applying the finish coat.
- 6—Darby strokes must be in the direction of the joists and studs, and the darby or rod must always span two joists or studs.
- 7—Thoroughly ventilate the plastered room with fresh air from open windows, especially in cold weather. Do not permit fresh plaster to freeze. Heat rooms if necessary.

Section 5

INSULATING WITH CELOTEX AS INTERIOR OR EXTERIOR FINISH

Material

Interior or exterior finish shall be **CELOTEX** Standard Building Board.

Framing

The studs and joists shall be framed to conform to the design of board spacing or paneling required, spacing studs and joists not more than 16" on centers and using extra studs, joists and headers if necessary. For the most substantial construction headers shall be provided back of chair rail and all other heavy molding. For interior finish a true, even framing surface is imperative for satisfactory results; therefore, it is necessary to use selected straight framing members of uniform thickness. The superior results obtained justify this care.

Application

(a) For Exterior Finish

Moisten and apply **CELOTEX** as described in Section 1, Standard Application.

(b) For Interior Finish

If the joints are to be covered with molding, the **CELOTEX** shall be moistened, and

applied as described in Section 1, Standard Application, except that for all exposed nailing, finishing nails $1\frac{3}{4}$ " long shall be used, spaced 3" apart and driven at an angle.

If the joints are not covered, do not moisten **CELOTEX**, but stand boards singly around room for at least 24 hours, without heat and with windows open, and then nail in place, using $1\frac{3}{4}$ " finishing nails throughout, spaced 3" apart and driven at an angle.

For certain schemes of interior decoration, the **CELOTEX** may be beveled to produce a broad "V" groove at each joint. The beveling may be done by means of coarse sandpaper wrapped around a block, or by cutting with a sharp knife or by sawing.

It is a good plan to apply the **CELOTEX** on the interior just before the wood trim is applied.

Painting and Decorating

The **CELOTEX** on the interior may be left in its natural color, or it may be stained or painted. Exterior surfaces should be painted before applying the molding or panel strips over joints. For painting instructions, see Section 8.

Section 6

INSULATING FLOORS WITH CELOTEX

Material

Floors shall be insulated with CELOTEX Standard Building Board.

Insulating Floors over Basements

Apply the CELOTEX either to the under side of the floor joists as interior finish, as described in Section 5, or under plaster, as described in Section 4, or place it between the rough floor and the finish floor, or in both places. Between the rough and finish floors it shall be laid with edges in moderate contact, nailing sufficiently to hold the CELOTEX in place while the finish floor is being laid. Nail finish floor through CELOTEX to sub-floor.

When sub-floor is omitted, nail CELOTEX Standard Building Board over joists in

accordance with Section 1, Standard Application, and immediately lay finish floor, as CELOTEX does not provide a working platform. Nail finish floor to joists.

Insulating Floors without Basements

For floors without basements, the CELOTEX may be applied either after being painted on the under side or by laying a good quality of waterproof building paper over the sub-floor and then applying CELOTEX as provided in the preceding paragraph.

When the sub-floor is omitted, the CELOTEX shall be painted on the under side before laying. It shall be applied without paper directly to joists in accordance with specifications in Section 1, Standard Application, and the finish floor immediately laid over it, and nailed to the joists.

Section 7

CELOTEX AS FLOOR DEADENER

For partial floor deadening, lay a continuous layer of CELOTEX over sub-floor, and lay finish floor on CELOTEX, nailing through to sub-floor. For specifications on sound

insulation of walls and floors communicate with THE CELOTEX COMPANY, 645 North Michigan Avenue, Chicago, Illinois.

Thousands of dollars' worth of perfectly good building materials are ruined every year by carelessness, ignorance or unworthy workmanship. Insist that these specifications be followed.

Section 8

SIZING, PAINTING, STAINING OR TINTING CELOTEX

Sizing and Priming

To secure maximum coverage, when oil paints are used, the surface of CELOTEX must be sized or primed.

When water paints or water stains are used, no sizing or priming is necessary.

GLUE SIZING: Dissolve two pounds of shell or chip glue in three gallons of boiling water and apply warm. Use no size that has been mixed over eight hours. Apply swiftly and evenly.

PRIMING: Instead of sizing, a priming coat containing $\frac{1}{3}$ turpentine, $\frac{1}{3}$ boiled linseed oil and $\frac{1}{3}$ paint, or a priming coat consisting of a thick paint to which a drier has been added, may be used. This should be brushed on swiftly and evenly.

Painting

Over a sized or primed surface, any paint may be used or painting effect produced.

NOTE: The above specifications apply equally to interior or exterior painting so far as the preparation of the walls are concerned.

Staining

Oil stain, benzol, alcohol, acid or any other penetrating stains may be applied over glue sizes in the usual manner.

WATER STAINS: All commercial stains used for dyeing wood may be used over CELOTEX

without sizing. These are mixed in hot water and applied cold in accordance with manufacturer's specifications. The stains should be applied swiftly and evenly with a large brush.

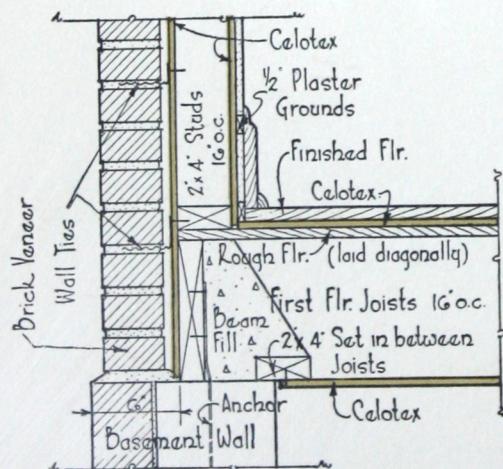
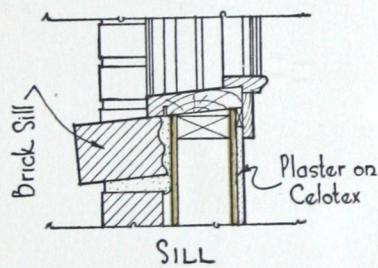
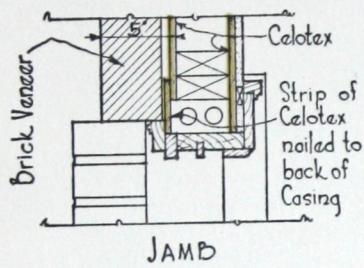
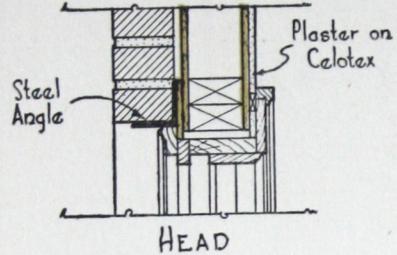
PASTE WATER STAINS: Paste water stains are dry colors which are mixed with paste specially prepared by manufacturers and may be applied without the use of sizes, as the paste contains the necessary glue. They are mixed in accordance with Manufacturer's Specifications. Any color or tint may be produced. Due to the slow drying qualities of this material other color tints may be mottled into them, producing tiffany or antique effects in one painting operation. Any stencil effect can be applied on this background in Fresco or Japan colors.

Kalsomining

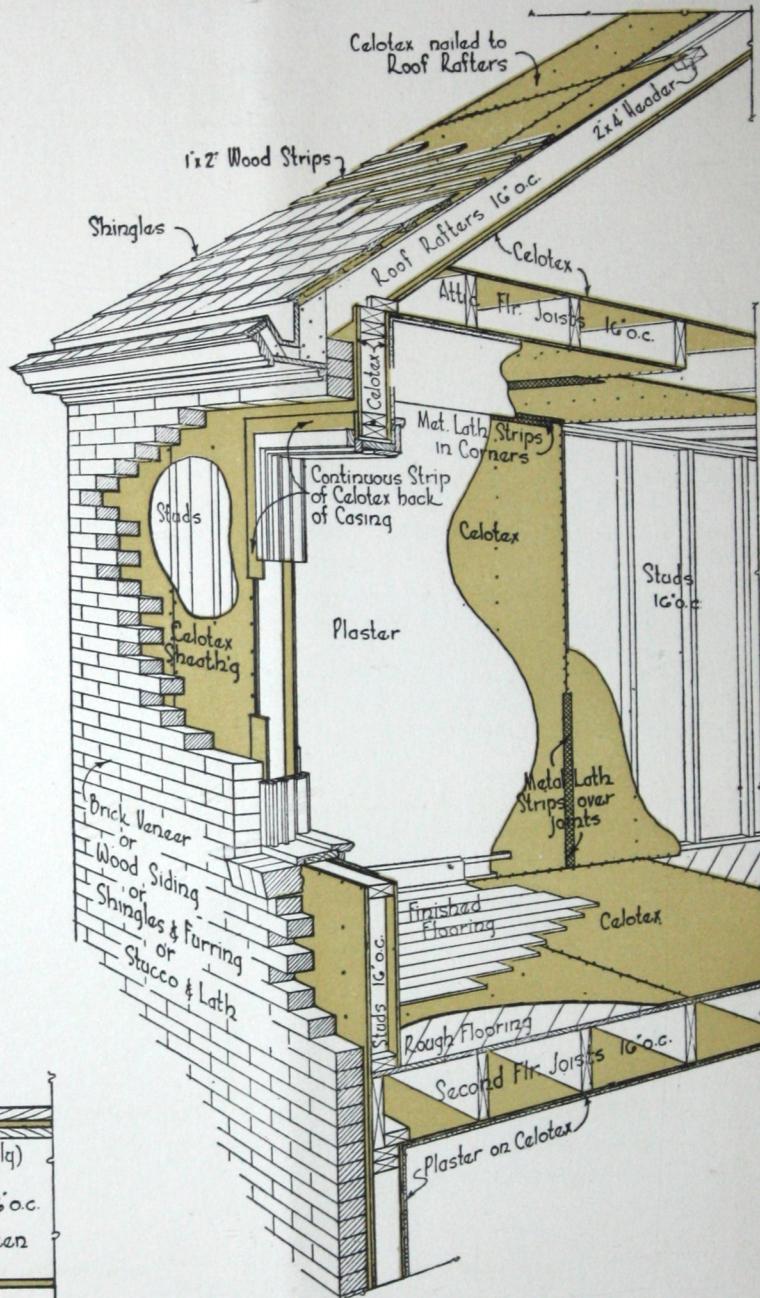
Kalsomine tints may be applied over either sized or unsized surfaces. When sizing is not used, add small amount of glue to mixture. Mix and apply in accordance with Manufacturer's Specifications. Any kalsomine surface may be stenciled in Fresco or Japan colors.

NOTE: For information on papering, applying Sanitas, wall canvas and for applying various plastic paints such as, Swedish putty, Craftex, Textone, Marb-L-Tex, etc., write to THE CELOTEX COMPANY, 645 North Michigan Avenue, Chicago, Illinois.

{ Tests on Celotex by reputable authorities furnished on request. Submit special problems covering heat or sound insulation or the application of Celotex to our Engineering Department. }

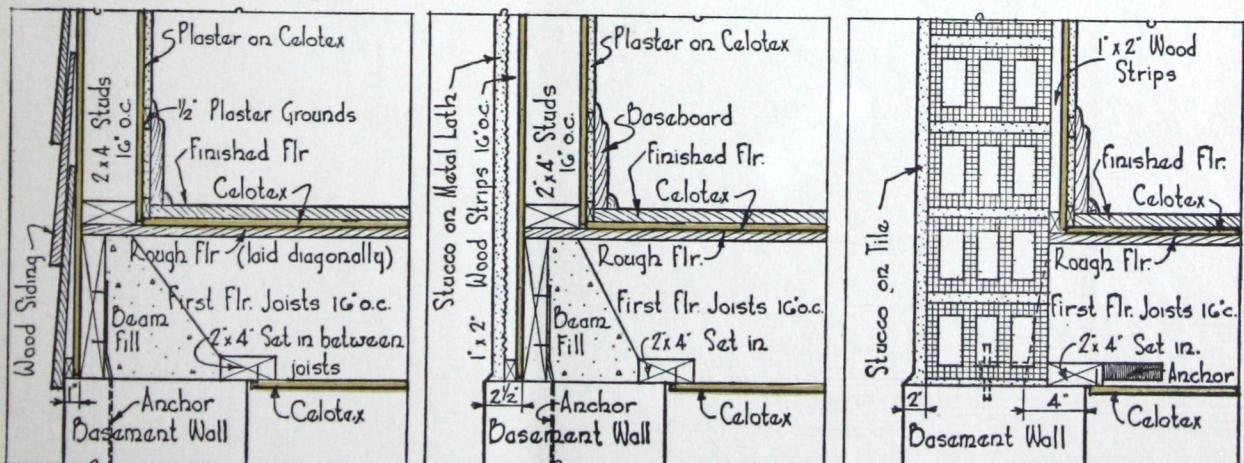
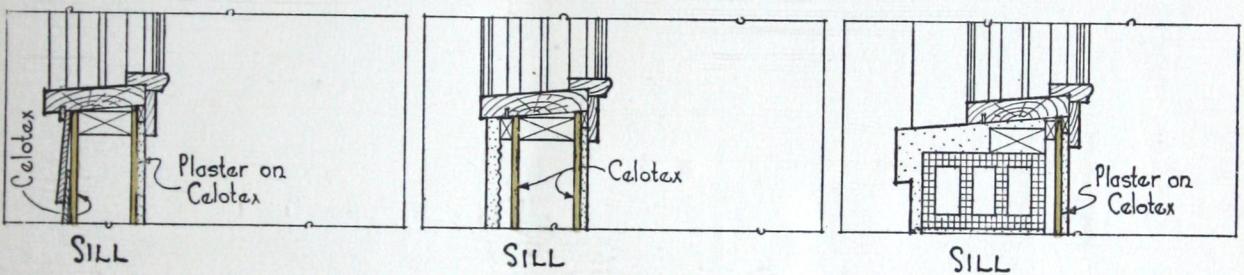
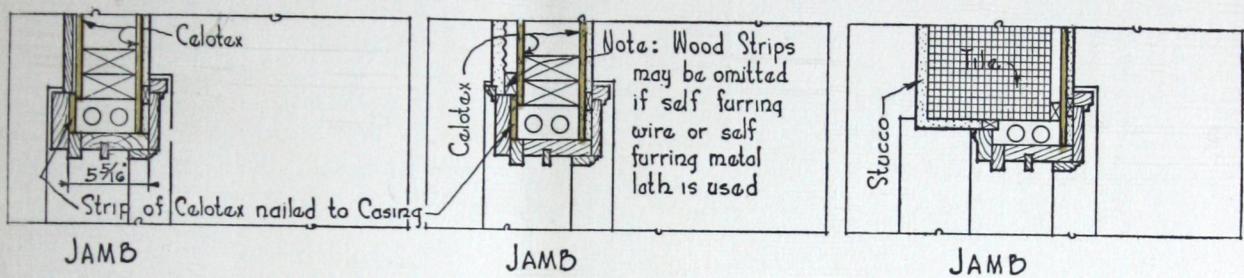
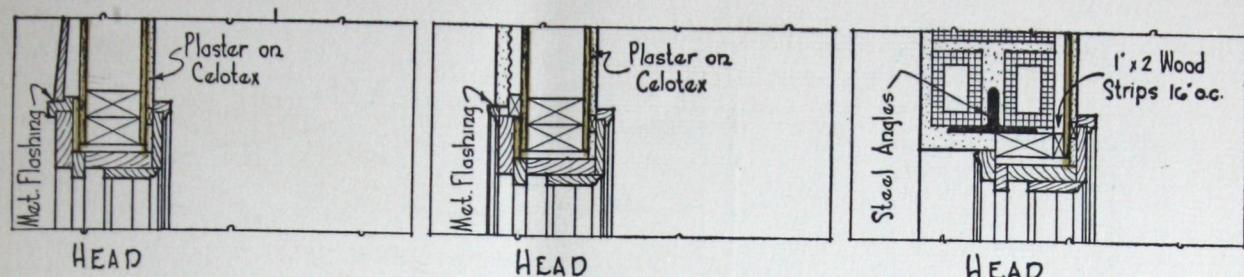


BRICK VENEER ON
WOOD FRAMING

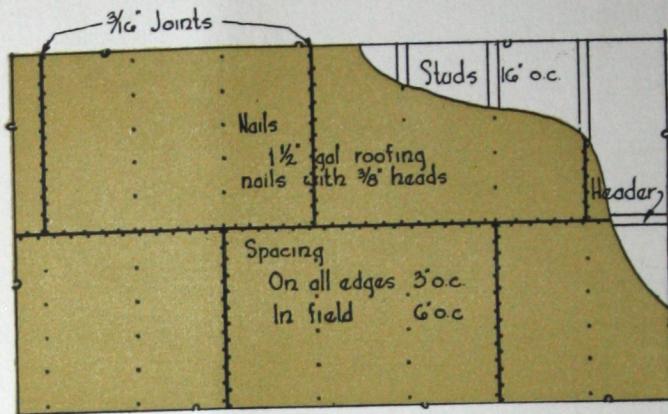
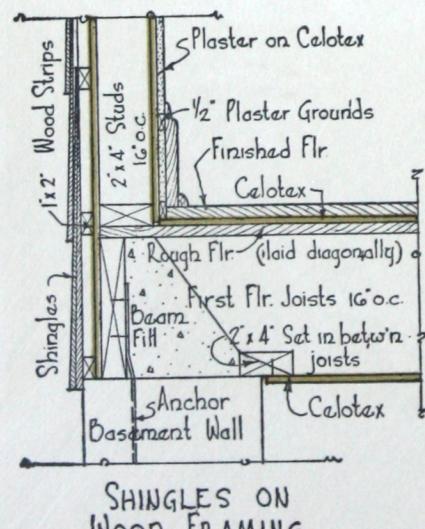
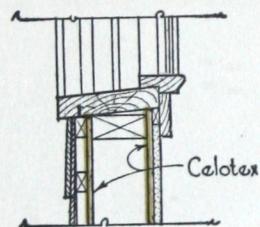
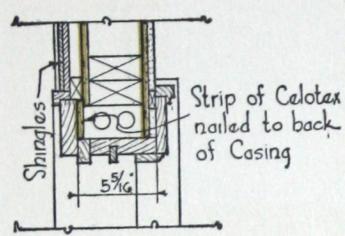
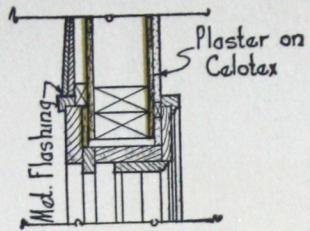


TYPICAL DETAIL OF
CELOTEX APPLICATION
IN PERSPECTIVE

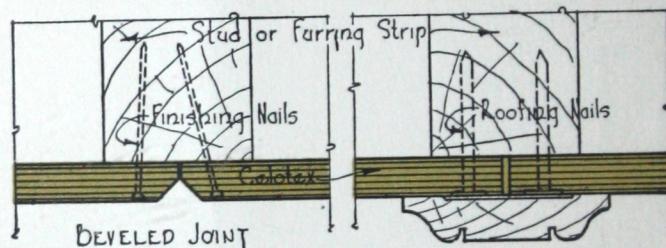
DETAIL No. 1—Showing Applications of CELOTEX



DETAIL No. 2 — Showing Applications of CELOTEX



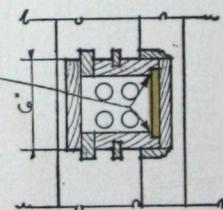
ELEVATION SHOWING METHOD OF STAGGERING JOINTS & NAILING CELOTEX



WOOD OR METAL STRIP COVERING JOINT

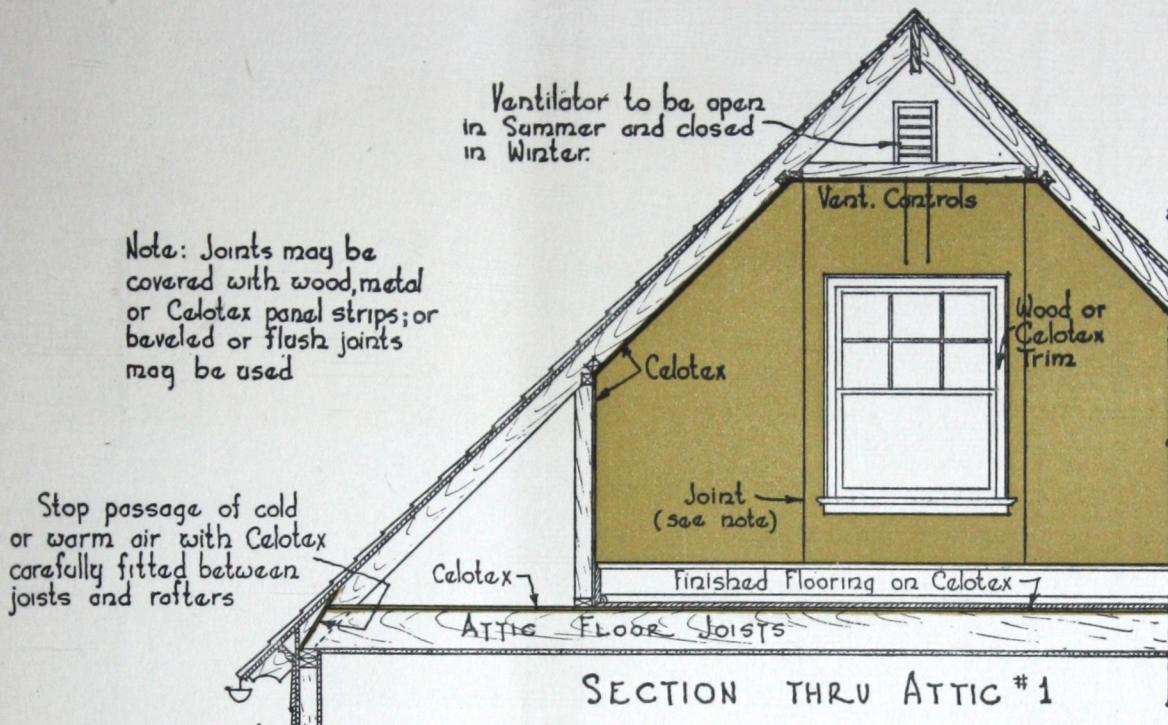
1/2 FULL SIZE SECTIONS SHOWING TYPICAL JOINTS FOR INTERIOR FINISH

Rabbitting of frame 1/2 x 1/2 to receive strip of Celotex

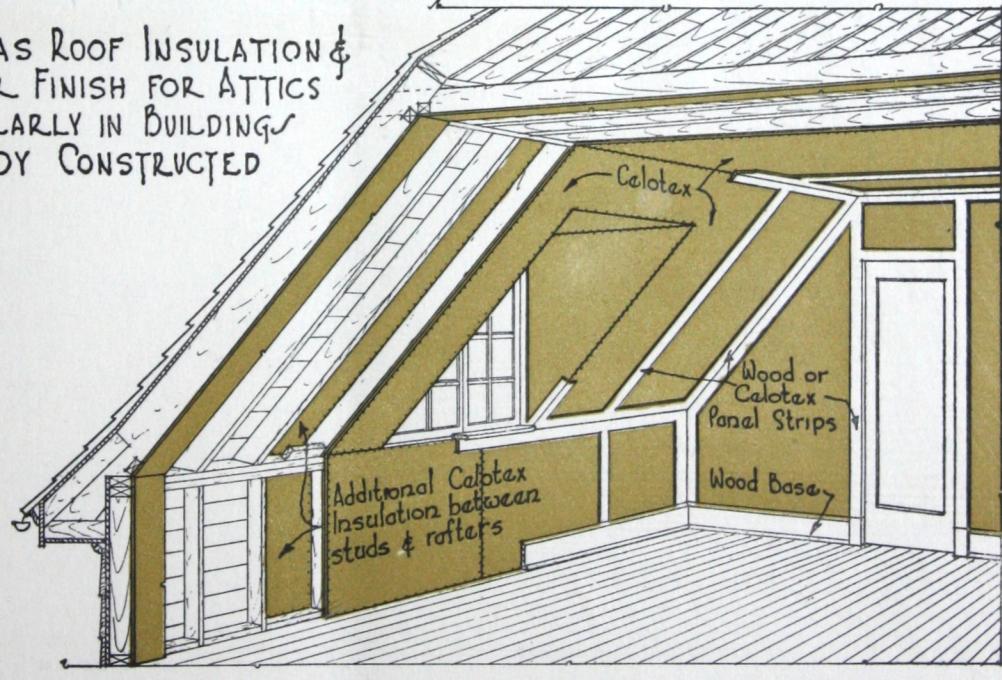


TYPICAL MULLION FOR ALL TYPES OF DOUBLE HUNG WINDOWS

DETAIL No. 3 — Showing Applications of CELOTEX

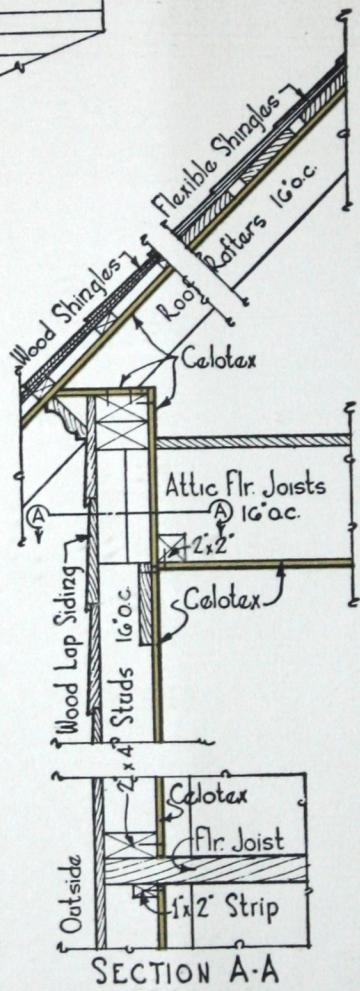
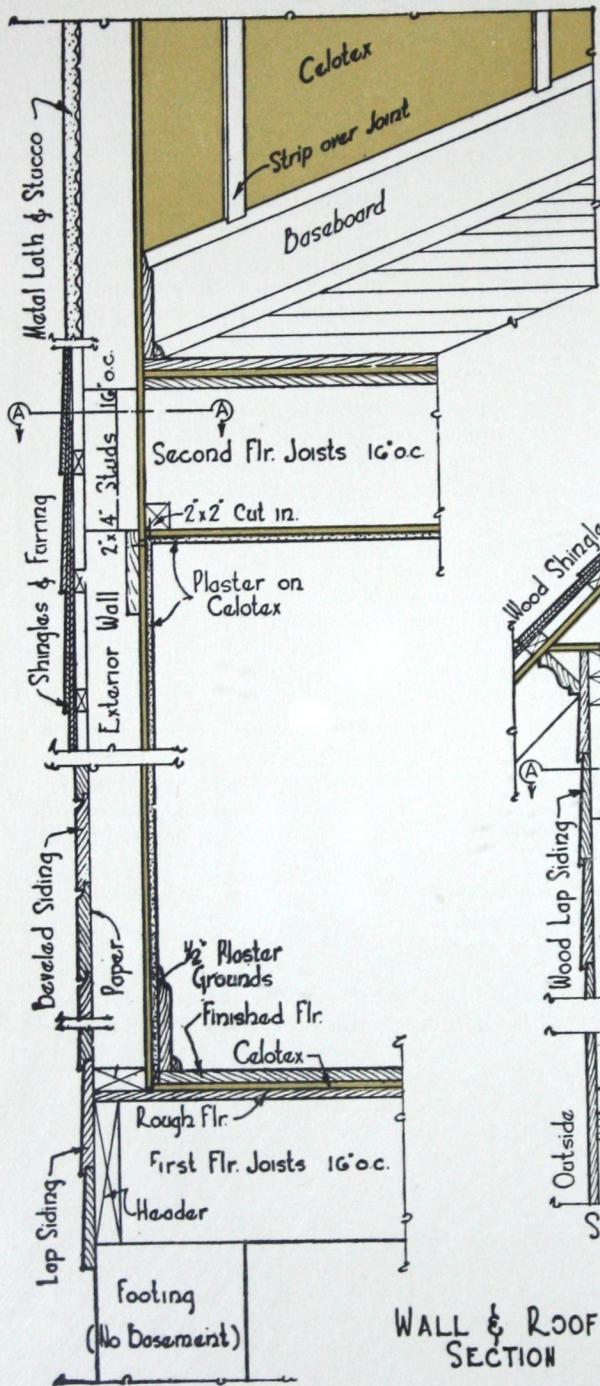


CELOTEX AS ROOF INSULATION &
INTERIOR FINISH FOR ATTICS
PARTICULARLY IN BUILDINGS
ALREADY CONSTRUCTED

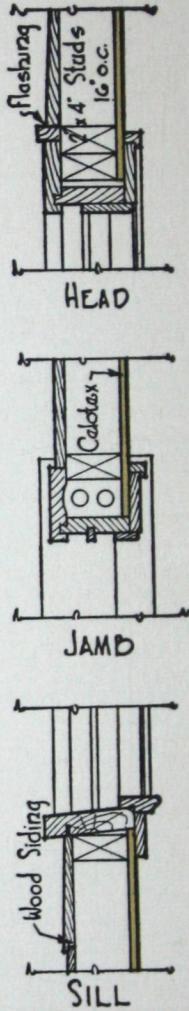


PERSPECTIVE OF ATTIC #2

DETAIL No. 4 — Showing Applications of CELOTEX



WALL & ROOF SECTION



DOUBLE HUNG WINDOW DETAIL

CELOTEX COTTAGE HOME CONSTRUCTION DETAILS

DETAIL No. 5—Showing Applications of CELOTEX

PRODUCTS of THE CELOTEX COMPANY

CELOTEX STANDARD BUILDING BOARD

Thickness $\frac{1}{16}$ "; average weight 60 lbs. per 100 sq. ft.; width 4 ft.; lengths 8 to 12 ft. A felted and waterproofed cane fibre board with heat insulating value of 0.33 B. t. u. per hour per sq. ft. per deg. Fahr. per inch thickness. Its strength in wall sections is greater than horizontal pine sheathing. It has a higher sound insulation value than standard deadening felts. Sterilized and freed from any soluble food content, it does not attract vermin or rodents.

Principal Uses

- (a) Sheathing (and insulation) for frame, stucco and brick veneer buildings, replacing wood sheathing.
- (b) Under plaster (and as insulation) replacing lath or plaster board.
- (c) Floor and wall sound insulation.
- (d) Interior and exterior wall finish. Can be painted or stained or left natural.
- (e) Insulation of Roofs, Attics and Cellars.

CELOTEX INDUSTRIAL BOARD

Thickness approximately $\frac{1}{2}$ "; average weight 58 lbs. per 100 sq. ft.; width 3 ft.; length 6 ft. Industrial Board has insulating value equal to that of Standard Building Board but less tensile strength, hence should not be used as replacement of wood sheathing; under plaster; interior or exterior finish, for which purposes Standard Building Board is especially adapted. As roof insulation to save fuel and radiation, to prevent condensation, to reduce expansion and contraction and to provide protection from the discomfort of outside heat or cold. Used over all types of wood, concrete, or metal decks; under slate, tile and all types of roof coverings; as a base for linoleum and as a lining under carpet. Also sound insulation, insulation for dry kilns, oil tanks, cooling rooms, fruit and vegetable storage, warm and cold air ventilating ducts, etc.

See Specifications—"Celotex Industrial Board." A. I. A. File 37 a 1.

CELOTEX INSULATION

Thickness $\frac{1}{2}$ "; average weight 56 lbs. per 100 sq. ft. Manufactured in special sizes to comply with the requirements of railroad car builders and other manufacturers.

Principal Uses

- (a) Railroad Refrigerator Car Insulation
- (b) Steel Car Insulation
- (c) Domestic Refrigerators
- (d) Ice Storage Houses

Address The Celotex Company for literature and information.

ACOUSTI-CELOTEX

Especially manufactured in tile form in several types and sizes for acoustical correction and sound-quieting treatment. It does not require a membrane or cloth covering for concealment, as it can be left in its natural pleasing tan color or decorated in any manner desired. It has definite high co-efficients of sound absorption established by reputable authorities. Results may be computed in advance and definitely measured after installation. It provides an acoustical treatment that will last as long as the building in which it is applied. The Acoustical Division of THE Celotex COMPANY maintains an engineering service for architects and builders. This service includes complete recommendations for all types of acoustical and sound-quieting treatments without charge. Effectively used in auditoriums, churches, business offices, banks, railway stations, radio broadcasting studios, printing offices, and all interiors having conditions that call for sound-quieting or acoustical correction.

See specifications in pamphlet—"ACOUSTI-CELOTEX." A. I. A. File 39 b.

